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EXAMINER

FOX, DAVID T

ART UNIT

PAPER NUMBER

1638

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14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/377,502

Applicant(s)

Paul et al

Examiner

FOX

Group Art Unit

1638

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Pri d for Reply

- 3 -

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

8/27/01 + 9/21/01

- ☒ Responsive to communication(s) filed on _____
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-39 is/are pending in the application.
- Of the above claim(s) 3, 4, 10, 11, 17, 18, 24, 25, 32-39 is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1, 2, 5-9, 12-16, 19-23, 26-31 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Pri rity under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☐ received in Application No. (Series Code/Serial Number) _____
- ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

*Certified copies not received: _____

Attachm nt(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☐ Interview Summary, PTO-413
- ☐ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other _____

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The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 7 and 21 as amended on 21 September 2001 have been rejoined with claims 1-2, 5, 6, 8, 9, 12-16, 19, 20, 22, 23 and 26-30, to the extent that claims 7 and 21 read on the elected invention, namely the expression of proteins not involved in male sterility or embryo-less seed. New claim 31 added by the amendment of 27 August 2001 has also been added to elected Species I.

The application should be reviewed for errors. Errors appear, for example, in amended claims 7 and 21, where "Apetala 3" should be replaced with --Apetala3--, and in claim 21, where "Apetale" should be replaced with --Apetala--.

Newly submitted claims 32-39 added by the amendment of 21 September 2001 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Claims 32, 34 and 36-39 are drawn to non-elected Species II, namely the production of a male sterility protein. Claims 33 and 35 are drawn to non-elected Species III, namely the production of a protein causing embryo-less seeds.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 32-39 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

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Applicants' amendments of 27 August 2001 and accompanying arguments have obviated the rejections of record under 35 USC 112, second paragraph, and the art rejections over Lloyd et al.

Claims 1, 2 and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite in its recitation of "the polypeptides and/or proteins", in line 1 of the ultimate paragraph, which lacks antecedent basis. Replacement of "and/or" after "polypeptides" with --or-- would obviate this rejection.

Claim 2 is indefinite in its recitation of "gene...is transgenic" which is contrary to art-recognized usage, as stated in the last office action for claim 16. Amendment of claim 2 to replace "transgenic" with --a transgene-- would obviate this rejection.

Claim 30 is indefinite in its recitation in lines 1-2 of "having a phenotype of an active enzyme" which is confusing, since enzymes do not have phenotypes. Insertion of the phrase --by virtue-- before "of" in line 1, as recited in claim 15, would obviate this rejection.

Claims 1-2, 6, 7, 12, 14-16, 20, 21, 26 and 28-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Krizek et al, as stated in the last office action for claims 15-16, 26 and 28-30. Note also that Krizek et al the production of an AP3/PI dimer (see, e.g., page 13, column 2, top paragraph) as claimed in claims 7 and 21, in plants containing both the AP3 and the PI gene, which dimeric protein was not produced in plants containing either the AP3 or the PI gene alone.

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Claims 1-2, 9, 14-16, 23 and 28-31 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 91/09957 (DUPONT), as stated in the last office action for claims 1-2, 9, 14-16, 23 and 28-30.

Claims 1-2, 9, 12, 14-16, 23, 26 and 28-31 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 95/20668 (NICKERSON), as stated in the last office action for claims 1-2, 9, 12, 14-16, 23, 26 and 28-30.

Claims 1-2, 5-7, 9, 12, 14-16, 19-21, 23, 26 and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krizek et al, as stated in the last office action for claims 15-16, 19, 23, 26 and 28-30. The derivation of seed or progeny from desirable genotypes as claimed in new claim 31 is well-known to those of ordinary skill in the art.

Claims 1-2, 5, 9, 12, 14-16, 19, 23, 26 and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 91/09957 (DUPONT), as stated in the last office action for claims 1-2, 5, 9, 12, 14-16, 19, 23, 26 and 28-30. The derivation of seed or progeny from desirable genotypes as claimed in new claim 31 is well-known to those of ordinary skill in the art.

Claims 1-2, 5, 9, 12, 14-16, 19, 23, 26 and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 95/20668 (NICKERSON), as stated in the last office action for claims 1-2, 5, 9, 12, 14-16, 19, 23, 26 and 28-30. The derivation of seed or progeny from desirable genotypes as claimed in new claim 31 is well-known to those of ordinary skill in the art.

Claims 1-2, 5-6, 8-9, 12-16, 19-20, 22-23 and 26-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 96/00789 (ALKO GROUP) taken with WO 93/17093 (OY

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ALKO AB) and Hiatt et al, as stated in the last office action for claims 1-2, 5-6, 8-9, 12-16, 19-20, 22-23 and 26-30. The derivation of seed or progeny from desirable genotypes as claimed in new claim 31 is well-known to those of ordinary skill in the art.

No claim is allowed.

Applicants' arguments filed 27 August 2001, insofar as they pertain to the rejections above, have been fully considered but they are not persuasive.

Applicants urge that the rejections under 35 USC 102 or 103 over Krizek et al are improper, given the failure of the reference to teach that inactive forms of the AP3 and PI proteins are produced in plants transformed with only one of the genes. The Examiner maintains that the claims are not so limited, particularly in view of claim 7 depending upon claim 1 and claim 21 depending upon claim 15. The phrase "an active enzyme, a regulatory protein *or* [emphasis added] a protein which affects [the functionality and/or viability and/or] the structural integrity of the cell" can be interpreted to mean that any single element of the Markush group, namely the "active enzyme", the "regulatory protein", or "a protein which affects...the cell", is not formed in plants containing only the A-encoding gene or the B-encoding gene, but is formed in plants containing both genes. In the instant case, Krizek et al teach the production of "a protein", namely an AP3/PI dimer (see, e.g., page 13, column 2, top paragraph) as claimed in claims 7 and 21, in plants containing both the AP3 and the PI gene, which dimeric protein was not produced in plants containing either the AP3 or the PI gene alone, wherein said dimeric protein confers a unique phenotype to the plants containing it, as stated previously.

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Applicants urge that the rejections under 35 USC 102 or 103 over DUPONT are improper, given the failure of the reference to teach an inactive form of the Cre protein or an inactive form of the NptII protein when each are expressed in plants containing only a *cre* gene or an *nptII* gene. The Examiner maintains that the claims are not so limited, as stated above. The reference teaches the production of “a protein”, namely an active NptII protein, in plants transformed with both genes, wherein said protein is not formed in plants containing only one of the genes. The insertion mutant of the *nptII* gene would not produce a functional NptII protein in plants which contain only this mutant gene in the absence of the *cre* gene, as taught by the reference and as claimed. The claims do not require that an inactive form of an enzyme be produced in both plants which contain only a single transgene.

Applicants urge that the rejections under 35 USC 102 or 103 over NICKERSON are improper, given the failure of the reference to teach the expression of an inactive form of the T7 RNA polymerase or an inactive form of the GUS protein when ligated to an appropriate promoter in separate plants. The Examiner maintains that the claims are not so limited, as stated above. The reference teaches the production of “a protein”, namely an active GUS protein, in a plant containing both a T7 RNA polymerase-encoding gene and a gene comprising a T7 promoter ligated to a GUS gene, wherein said active GUS protein was *not* produced in plants containing either the T7 RNA polymerase-encoding gene or the GUS gene under the control of the T7 promoter. The claims do not require that an inactive form of an enzyme be produced in both plants which contain only a single transgene.

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Applicants urge that the rejection under 35 USC 103 over a combination of references is improper, given the failure of the first two references to teach or suggest the production of inactive enzymes in plants transformed with only one trehalose synthesis enzyme-encoding gene, and the failure of the third reference to remedy the deficiencies of the first two.

The Examiner maintains that the claims are not limited to the production of inactive enzymes in plants transformed with only one transgene, as stated above. The first two references do in fact teach that plants containing genes encoding only a single subunit of the protein trehalose phosphate synthase are unable to produce an active, complete form of the enzyme necessary for the actual production of trehalose, while plants transformed (or cross-bred) to contain both genes encode "a protein" which was not produced in either of the two plants containing only a single gene, namely active and complete trehalose phosphate synthase, wherein the production of this protein allows trehalose production which confers a unique phenotype to the plants containing it.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David T. Fox whose telephone number is (703) 308-0280. The examiner can normally be reached on Monday through Friday from 10:30AM to 7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson, can be reached on (703) 306-3218. The fax phone number for this Group is (703) 872-9306. The after final fax phone number is (703) 872-9307.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

November 21, 2001

DAVID T. FOX
PRIMARY EXAMINER
GROUP 180-1638

